

CLAIMS

What Is Claimed Is:

5 1. A method of diagnosing endometrial irregularities by screening an endometrial sample or bodily fluid for the presence of the *ebaf* or *ebaf* splice variants that are differentially expressed.

10 2. The method according to claim 1, wherein said screening step further includes screening by Northern blot analysis or Western blot analysis.

15 3. The method according to claim 1, wherein said screening step further includes screening using immunohistochemical staining.

20 4. A diagnostic tool for determining the presence of endometrial irregularities comprising:
screening means for screening a sample for the presence of *ebaf*.

25 5. The diagnostic tool according to claim 4, wherein said screening means is a Northern blot analysis.

6. The diagnostic tool according to claim 4, wherein said screening means is a Western blot analysis.

Sub F11
7. The diagnostic tool according to claim 4,
wherein said screening means is an immunohistochemical
stain.

5 8. The diagnostic tool according to claim 4,
wherein the ebaf protein is detected.

Sub F11
9. The diagnostic tool according to claim 4,
wherein the mRNA encoding ebaf is detected.

10 10. The diagnostic tool according to claim 4,
wherein the endometrial irregularity is infertility.

11. The diagnostic tool according to claim 4,
15 wherein the endometrial irregularity is endometriosis.

12. The diagnostic tool according to claim 4,
wherein the endometrial irregularity is abnormal uterine
bleeding.

20 13. A contraceptive composition comprising an
effective amount of ebaf in a pharmaceutically acceptable
carrier.

Sub F11
25 14. A contraceptive device comprising an
effective amount of ebaf in a pharmaceutically acceptable
carrier.

15. A diagnostic kit for timing conception
30 comprising screening means for screening a sample for the
presence of ebaf.

Sub F11
16. The diagnostic kit according to claim 15,

wherein the *ebaf* is a protein.

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5 17. The diagnostic kit according to claim 17,
wherein the *ebaf* is mRNA.

18. A method of treating endometrial
irregularities by down-regulating the expression of *ebaf*.

Sub
10 19. A method for determining endometrial
receptivity level by determining the levels of *ebaf* by
sampling tissue and bodily fluids.

15 20. A method for determining endometrial
receptivity level by determining the levels of *ebaf* by
immunoassay.

20 21. A method for determining endometrial
receptivity level by determining the levels of *ebaf* by
immunohistology.

22. A method for determining endometrial
receptivity level by determining the levels of *ebaf* by PCR.

25 23. A method for determining endometrial
receptivity level by determining the levels of *ebaf* by
northern, western, or southern blot.

30 24. A method of diagnosis and prognosis of
infertility by determining optimal treatment or treatment
response by determining *ebaf* levels.

25. A method of diagnosis and prognosis of

endometriosis by determining optimal treatment or treatment response by determining ebaf levels.

5 26. A method of diagnosis and prognosis of menometrorrhagia by determining optimal treatment or treatment response by determining ebaf levels.

27. An antisera directed to ebaf.

10 28. A marker present in bodily fluids for determining endometrial receptivity comprising ebaf.

29. A marker in bodily fluids for infertility, comprising ebaf.

15 30. A method of modulating ebaf to regulate fertility by modulating the amount of ebaf produced.

20 31. A kit for the diagnosis, monitoring, and prognosis of patients comprising an immunohistology test for determining ebaf levels.

25 32. The kit according to claim 31, wherein said immunohistology test further includes antisera.

33. A kit for the diagnosis, monitoring, and prognosis of patients comprising an immunoassay for determining ebaf levels.

30 34. The kit according to claim 33, wherein said immunoassay further includes antisera and peptides as positive controls.

35. A kit for the diagnosis, monitoring, and prognosis of patients comprising a blotting test for determining ebaf levels.

36. The kit according to claim 35, wherein said blotting test further includes antisera and peptides.

37. A kit for the diagnosis, monitoring, and prognosis of patients comprising a PCR for determining ebaf levels.

38. The kit according to claim 37, wherein said PCR further includes at least one probe to ebaf.

39. A peptide comprising CASDGALVPRRLQHRP-amide (Seq Id No.:3).

40. A detection device for detecting the presence of at least one variant of ebaf.